curve theorem, which to the author's knowledge is never needed in function theory."

What is the place which Thron's book will occupy in the literature? Certainly it contains much valuable material, well organized and in convenient form for coordinated study. For this reason it belongs (a) in the library of every college which makes an attempt to teach mathematics, and (b) in the personal library of every specialist in function theory. However, just because it is so carefully written, with so much attention devoted to foundations, it should never (in the reviewer's opinion) be used as text either in a beginning or advanced course in function theory. The author is to be congratulated for his courage in writing such a book and his success in finding a publisher, and the publisher in turn has performed a real service for mathematics.

A. W. Goodman

Isoperimetric inequalities in mathematical physics. By G. Pólya and G. Szegö. (Annals of Mathematics Studies, no. 27.) Princeton University Press, 1951. 16+279 pp. $3.00.

The title of this book, as remarked by the authors in the preface (where the authors have admirably delineated the aims of the present work), suggests its connection with a classical subject of mathematical research, the "isoperimetric problem." This problem consists in seeking among all closed plane curves, without double points and having a given perimeter, the curve enclosing the largest area. The "isoperimetric theorem" gives the solution to the problem: of all curves with a given perimeter, the circle encloses the maximum area. If the perimeter of a curve is known, but the exact value of its enclosed area is not, the isoperimetric theorem yields a modicum of information about the area, an upper bound, an "isoperimetric inequality"; the area is not larger than the area of the circle with the given perimeter. There are, besides perimeter and area, many important geometrical and physical quantities (set functions, functionals) which depend upon the size and shape of a curve. There are many inequalities, similar to the isoperimetric inequality, which relate these quantities to each other. By extension, all these inequalities can be called "isoperimetric inequalities." Besides, there are analogous inequalities dealing with solids, pairs of curves (condenser, hollow beam), pairs of surfaces, and so forth. The present book is concerned with inequalities of this type.

An example of such an isoperimetric inequality, with which the subject matter of the book may be said to have begun, is the conjecture of B. de Saint-Venant (1856) concerning the torsion of elastic